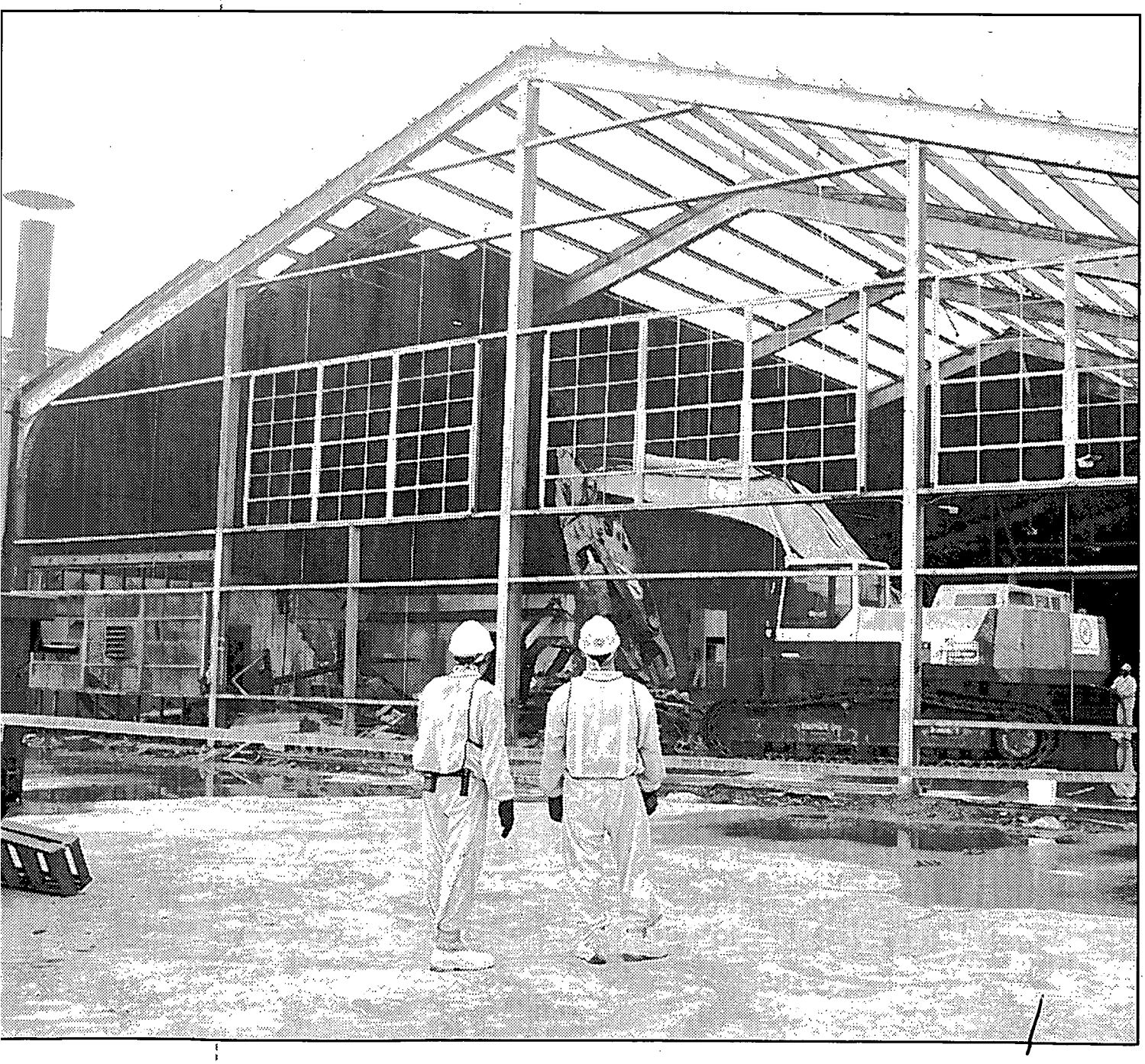
fernald Report

Inside

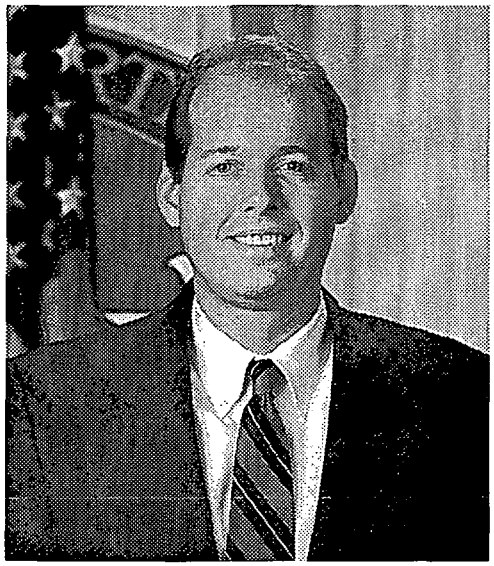
August 1999



message from
Jack Craig

Technology tools to share

While Fernald's cleanup efforts move forward, so does the need to identify, investigate and implement new and innovative technologies. As a site, we are dedicated to using the latest proven technology to support the clean-up mission by providing a safer, less costly and faster remediation. With the support of the Department of Energy's Office of Science and Technology (OST), Fernald has been able to establish itself as a leader in the use of innovative remediation technologies.



One of the keys to our success is getting input from the workers who are actually involved in the processes. Visiting the field and talking to the team members who need and use technologies allows us to get the required tools into the hands of the true end-users.

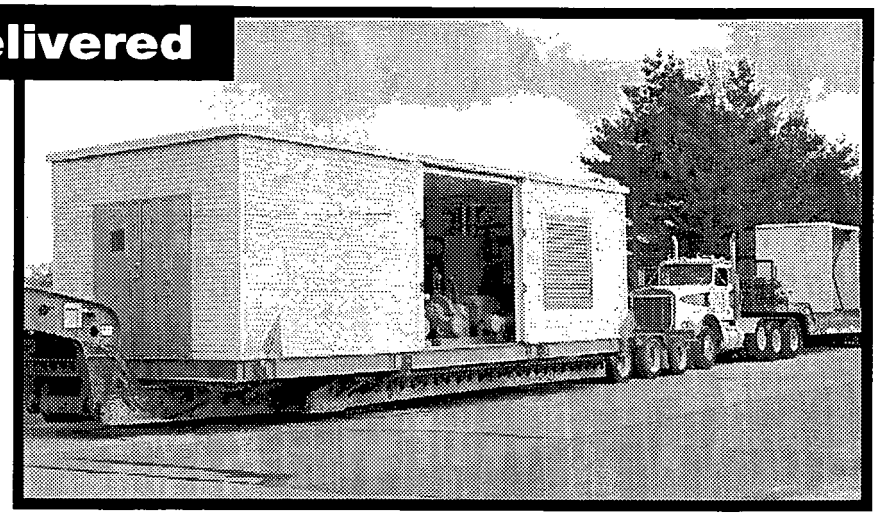
On Aug. 3, DOE-Fernald and Fluor Daniel Fernald hosted a Technology Open House for the DOE Subsurface Contaminants Focus Area groups. This important meeting was attended by Gerald Boyd, Associate Deputy Assistant Secretary for the DOE-OST. Part of the day's activities included a formal demonstration using the oxygen-gasoline torch, which was successfully deployed during the demolition of Plant 1. Like most torches it is used to cut steel, but it uses gasoline as a source of fuel. It's up to 200 percent faster than other methods, cheaper since it uses gasoline instead of acetylene and safer due to no backflash during the process.

Since 1992 DOE and Fluor Daniel Fernald have deployed 22 technologies. Based on successes at Fernald some of these, such as the oxygen-gasoline torch and personal ice-cooled suits, have been deployed at other DOE sites. It is estimated that the potential savings from these technologies exceed $100 million. We will continue to focus on utilizing and deploying new technologies and sharing information on our experiences with other DOE sites.

Jack Craig
Director, DOE-Fernald

On the cover: *Two operators watch as a 35 ton shear is being used to dismantle the former Maintenance Building (7118-d102).*

Portable Building Delivered



The arrival of a 396 square foot building on site isn't something you see every day. In fact, it's not something you've ever seen. The 12- by 33-foot prefabricated concrete structure houses six pumps that will be used in conjunction with Fernald's new domestic/fire water tank. "The pumps were manufactured in Texas and shipped to Kentucky where the building was constructed. The pump building was delivered on Aug. 5." said John Trygier, DOE-Fernald team leader of the decontamination and dismantlement projects. "The rationale behind the decision to purchase a prefabricated building was to ensure the system would be portable. Our intent is for the tank and pumps to be reused at another facility when they're no longer needed here."

It was necessary to install the new domestic/fire water tank to accommodate the cleanup progress being made in the former production area of the site. Currently, drinking water and water to be used in the event of a fire are stored primarily in the site's two water towers which are scheduled for demolition in the near future. Approximately 400,000 gallons of water are kept in reserve in case the public water supply is unable to provide an adequate amount of water in an emergency. The Fluor Daniel Fernald team is currently testing the system. "We plan to do about four weeks of testing to make sure there are no glitches," said construction engineer Charlie Singer. "We'll take the existing water towers out of service and have the new water tanks and pumps operational by the end of September."

Above: The pump building for the new domestic/fire water tank was delivered to the site already assembled, a testament to its portability (7014-d121).

Above: Approximately 50 cubic yards of soil was treated at the Firing Range (7179-d17).

Treating soils in place saves $$

During Fernald's production years, two areas at the site were contaminated with lead from target practice and trap shooting activities. The security guards used the Firing Range, located at the Southern Waste Units, for training purposes from the mid-1950's until 1988. As for the Trap Range, located west of the North Access Road, Fernald employees used that area for recreational purposes during the same time period. Both activities resulted in lead deposition into the soil.

The soil is being stabilized by Sevenson Environmental Services Inc. Sevenson is using their patented MAECTITE® chemical to stabilize the lead-contaminated soils in place. The MAECTITE® chemical is mixed with soil and water with the bucket of a backhoe. A chemical reaction converts the soluble lead that is dangerous to humans into hard, non-soluble crystals. Sampling has shown that the treatment is successful in reducing lead levels to below EPA requirements for hazardous waste treatment. Once the soils have been treated, the material will meet the waste acceptance criteria of the On-Site Disposal Facility. The packaging, shipping and disposal costs savings could amount to more than $400,000.

Contract Rebid

On Aug. 5, 1999, Secretary of Energy Bill Richardson announced the DOE's plans to re-compete the contract for the Fernald Environmental Management Project. Secretary Richardson believes that competitive bidding challenges the incumbent contractor and other bidders to bring forth their best ideas for innovation and efficiencies critical to achieving the goal of accelerated closure of the Fernald site by the end of 2006. The Secretary also noted that the Fernald site contract team, which is led by Fluor Daniel Fernald, has performed well.

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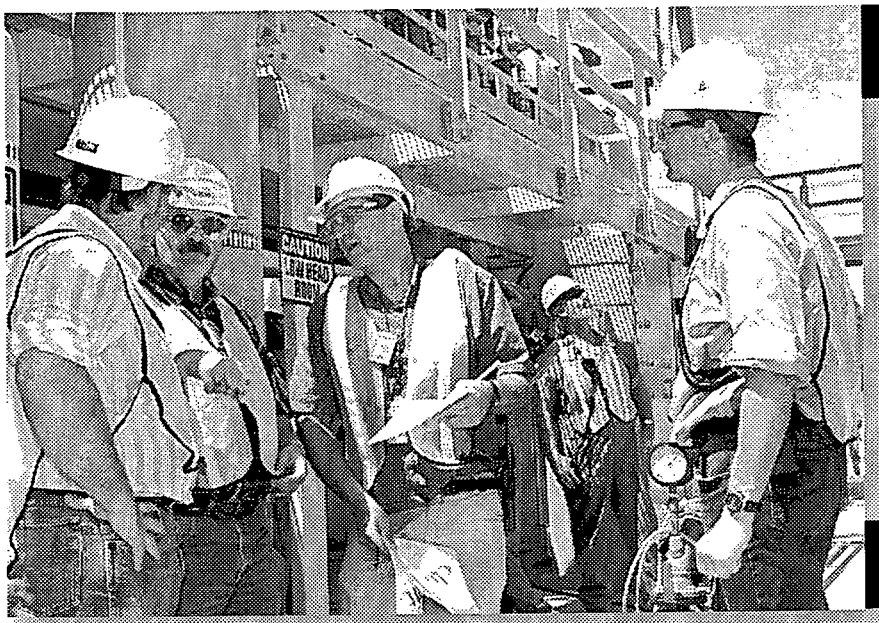
Cleanup **Progress** Update



Waste Pits Remedial Action Project (WPRAP)

- Shipped fifth and sixth unit trains to Envirocare of Utah on July 7 and July 21 (see "Fernald Shipments" section for details)
- Processed 10,780 tons of material from Soil Pile 7
- Continued preparation for Pit Excavation Standard Startup Review
- IT Corp. continued construction of remaining waste processing facilities needed for pit excavation and training of site personnel for full operations

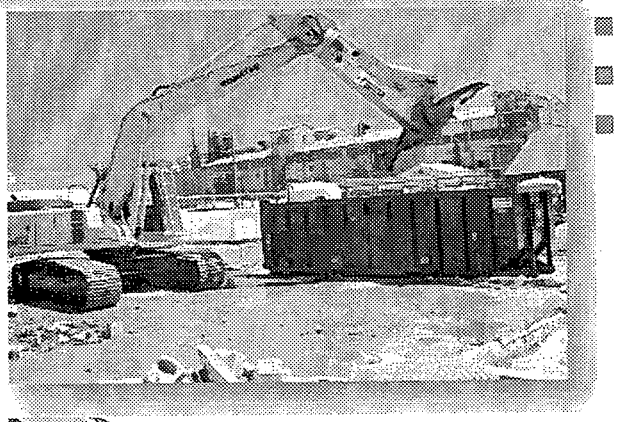
On-Site Disposal Facility (OSDF)

- Continued placement of impacted materials in Cell 2
- Began placement of impacted materials in Cell 1
- Completed processing of clay for Cell 3 liner construction

Above: The WPRAP startup team prepares to introduce natural gas to the dryers (6944-d860).

Right: Structural steel from dismantled buildings is being loaded into containers that will be placed in the OSDF (6949-d46).

Far right: A truck dumps soil from the Old Sewage Treatment Plant for placement into the OSDF (6319-d2086).



Demolition Projects

Facilities Shutdown

- Continued shutdown of Building 63

Decontamination & Dismantlement (D&D)

- Plant 5 Complex —
  - D&D subcontractor, MACTEC, Inc., continued pre-mobilization activities and completion of required training
- Maintenance/Tank Farm Complex and Water Storage Tank Project —
  - Continued D&D of Building 12A, including exterior transite removal, structural dismantlement and dismantlement of pipe bridges
  - Continued installation/connection of underground water lines for water storage tank

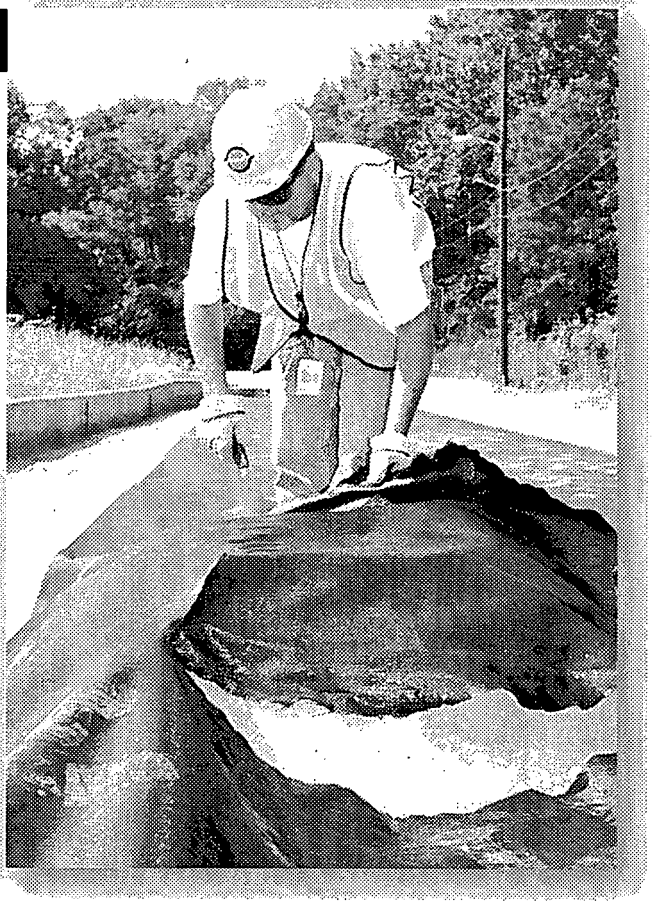
Left: Wise Services dismantles a Cinergy distribution tower to make room for OSDF cell expansion to the south (7177-d04).

Below left: Paving is needed to upgrade the road in support of the Silos Infrastructure Project (6971-d203).

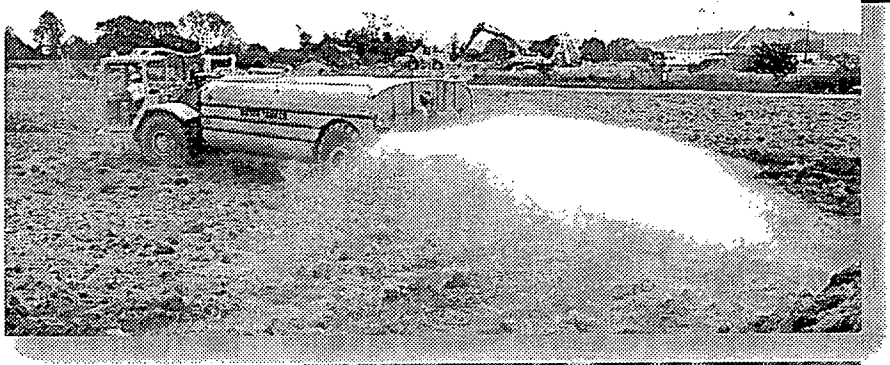
Below: A team member trims the geotextile liner around a manhole prior to paving at the Silos Infrastructure Project (6971-d194).

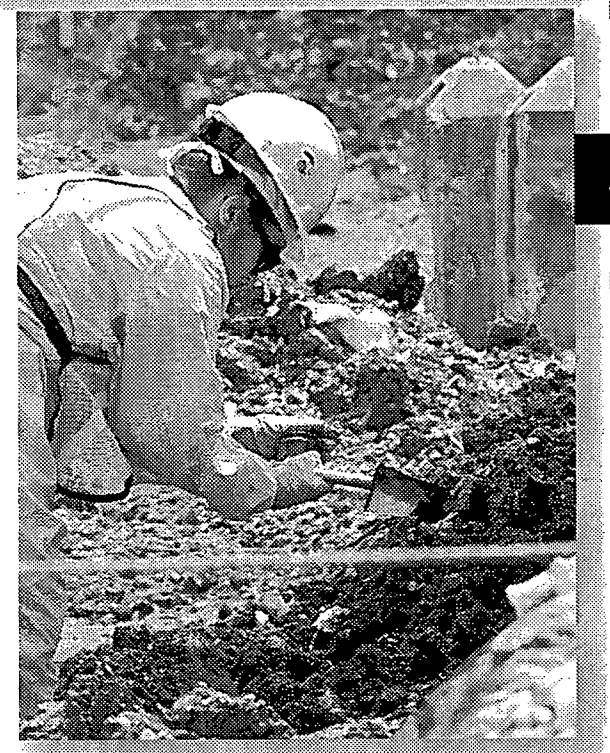
Silos Project

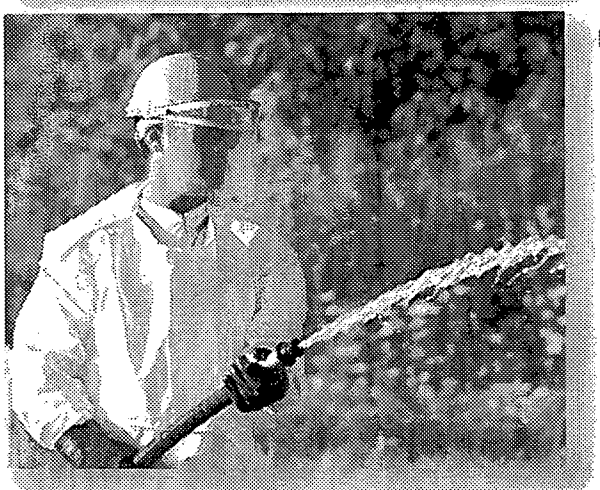
- Began asphalt paving for the Silos Infrastructure Project
- Conducted a Silos Project status briefing for stakeholders at July 13th Monthly Progress Briefing, focusing primarily on Silos 1 and 2 Feasibility Study and Proof-of-Principle Testing reports
- Continued review of contractor submittals for both Silo 3 Project and Silos 1 and 2 Accelerated Waste Retrieval Project



Cleanup **Progress** Update







Top: A water tanker performs dust control at the Old Sewage Treatment Plant soil excavation area in order to meet EPA dust control requirements (6620-d303).

Center: A Horizon Environmental employee takes moisture content samples of sludge cake at the east sludge beds of the Old Sewage Treatment Plant (6620-d290).

Below: A technician applies Maectite stabilization reagent to lead-contaminated soil at the Old Trap Range (7179-d43).

Opposite page: Tim Fain, supervisor, uses a Scotch Trak heat tracer to take the external surface temperature of a drum that holds two five-gallon thorium containers (7048-d31).

Aquifer Restoration/ Wastewater Project

- Completed construction of Sludge Removal System at Stormwater Retention Basin/Biosurge Lagoon on July 23; System Operability Testing to take place in August
- Continued construction of Advanced Wastewater Treatment Laboratory Expansion
- Completed design of additional extraction wells for South Field Extraction System on July 30
- Awarded contract for assembly and installation of new control panel at Advanced Wastewater Treatment Facility to System Sales, Inc.

Soil Project

- Area 1 Phase II Southern Portion of East Field
  - Performed final walk-down of Site Preparation Package construction
  - Initiated field activities in Trap Range area; as of July 28, treatment was 65 percent complete
  - Completed excavation and hauling of materials in various areas of old Sewage Treatment Plant; began excavation of underground storage tank and related soil
- Area 2 Phase III South Central Portion of Fernald Site
  - Completed approximately 75 percent of soil certification sampling
- Area 2 Phase I Southern Waste Units
  - Completed stabilization and sampling of soil within lead-contaminated firing range area
  - Began excavation of stockpiles in South Field

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Waste Management Projects

- Thorium Legacy Waste Project —
  - Repackaged five boxes of low-level waste for shipment to Nevada Test Site
  - Segregated three boxes of mixed-waste for storage and treatment
  - Total of 347 boxes repackaged and 62 boxes segregated
- Nuclear Materials Disposition —
  - Continued repackaging 10-gallon cans of depleted uranium tetrafluoride (UF_4) for shipment to DOE-Oak Ridge; total of 339 of an estimated 540 boxes repackaged as of July 31
  - Continued movement of Fernald uranium to DOE-Oak Ridge Portsmouth, Ohio, site; total of 77 shipments as of July 31

Fernald Shipments — July 1999

Contents - Destination	Shipment Mode	No. of Shipments	Monthly Total	FY99 Total
Low-Level Waste - Nevada Test Site	Truck	9	17,569.5 cu. ft.	18,921 cu. ft.
Liquid Mixed Waste - Toxic Substance Control Act Incinerator at Oak Ridge	Tanker Truck	3	11,078 gal.	32,497 gal.
Nuclear product/materials - Portsmouth	Truck	43	1,196,325 net lbs. or 411.3 metric tons uranium	2,143,337 net lbs. or 736.9 metric tons uranium
Waste Pits Projects - Envirocare of Utah, Inc.	Rail	2 Unit Trains (105 railcars)	11,303 tons	33,175 tons (308 railcars)

The long, hot summer

The tri-state area is suffering from one of the driest summers on record. The dry conditions increase the amount of fugitive dust generated on site due to the extensive level of field activities. Through negotiations with the EPA, fugitive dust emission limits have been established for the site. To meet these emission limits, the best available practices are employed to control fugitive dust emissions. As many as six water trucks are used to spray the roadways and construction areas. The capacity of the trucks varies from 3,750 gallons to 5,000 gallons. Each truck distributes between five and 15 loads of water per day, depending upon weather conditions. The trucks are supplemented by a sprinkler system that is used on many of the construction work areas and haul roads. Currently, there are two automated truck wheel washing areas that reduce dust by preventing the buildup of dirt on the Haul Road.

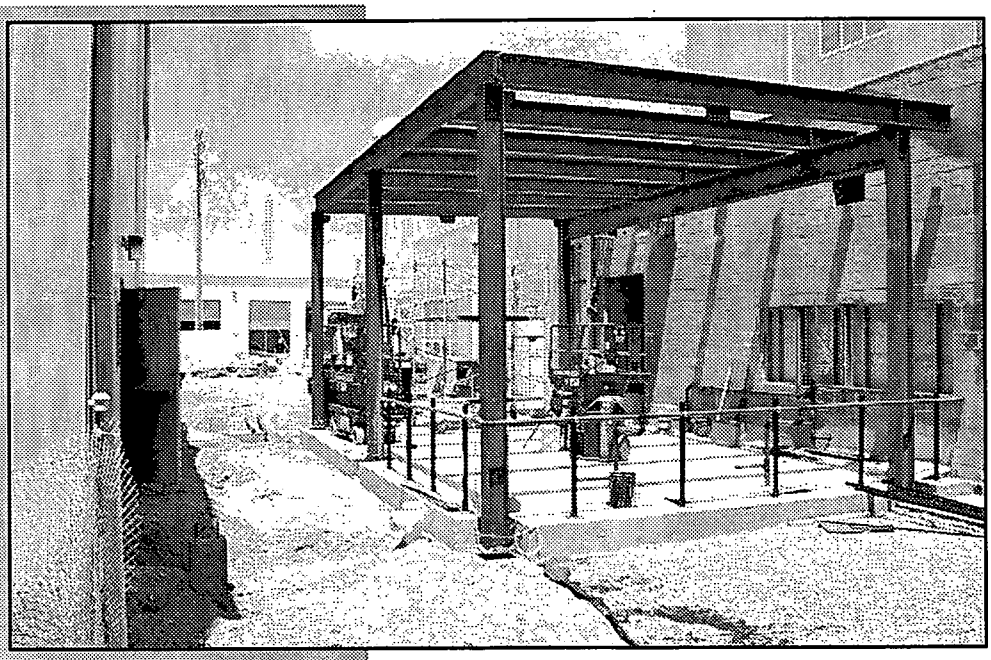
Water usage averages 200,000 gallons per day during extremely hot and dry periods which is enough to fill Coney Island's Sunlite Pool every five days. The water for the dust control is obtained from the wells located around the site.

Left: A third automated wheel wash facility will soon be operational in the Waste Pit Area (6319-d2064).

Expansion of the AWWT laboratory

The Advanced Wastewater Treatment (AWWT) facility contains a laboratory which plays an important role in monitoring how the facility operates. The lab is used to check the treatment process and water leaving the site either by discharge to the river or re-injection back into the aquifer.

The original laboratory is too small to support current and future needs. The expansion will give the lab enhanced capabilities to support mineral, nutrient and uranium analyses. The facility will have fumehoods, chemical storage, safety showers, lab benches and workstations. The project is slated to be completed this month.



Above: The new addition will more than triple the existing lab space (7120-d43).

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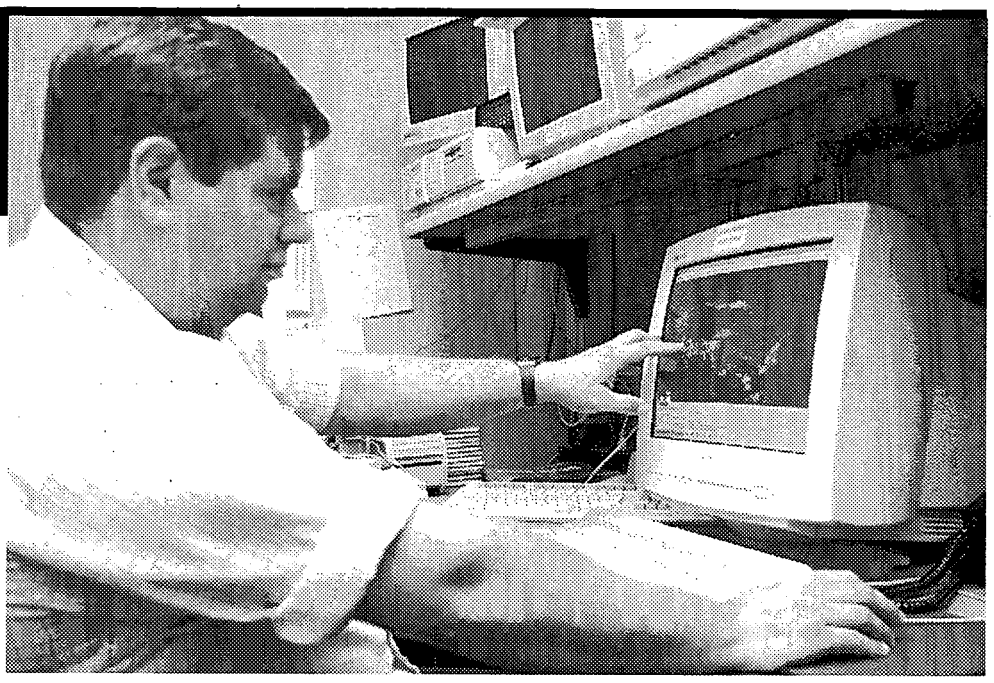
Accurate forecasting = Safer job site



About five years ago, Fernald implemented Weather Systems International (WSI) which gives the site all current National Weather Service data using satellite photos, radar images, bulletins and advisories. WSI allows for quicker and more accurate advisories and warnings to the site before severe weather strikes. The radar has the ability to forecast the weather for field work such as construction and other project related activities.

The Weather Work Station is administered by the National Weather Service, and was recently updated to be Y2K compliant. Overall, the system is faster, has better graphics and ultimately the site is safer because of the advanced warnings. In addition, Fernald's own meteorological tower (MET) monitors data such as wind speed and direction, temperature, and other information that is used in annual EPA reports.

Above: Ed Ray, site meteorologist, looks at a satellite photo on the weather work station that is used to detect severe weather (7198-d03).

CRO requests funding for job growth

Above: One initiative the CRO is proposing is linking resources with the Cincinnati Chamber of Commerce and area economic development agencies to stimulate business growth in the area (6944-d852).

The Fernald Community Reuse Organization (CRO) has submitted a funding request to DOE for $12 million over a three-year period to help offset economic impacts from Fernald's closure and promote employment opportunities for workers and local residents. The CRO's plan and funding request are outlined in the *1999-2002 Community Transition Plan and Implementation Request.* The plan is available to workers and the public in the Public Environmental Information Center, Fernald's Career Development Centers, and online at www.fernald.gov ("Stakeholders" section under Community Reuse Organization).

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Silver Queen offered something for all

There was something for everyone at the eleventh annual Silver Queen Festival held on July 31, in Ross. Visitors enjoyed a full day of activities beginning with the 5K Race and Walk sponsored by the Fernald Community Involvement Team, Ross IGA and Gold Star Chili. The sizzling heat made the Ross Middle School cheerleaders' dunking booth a popular place. Some of the festivities included: the Future Farmers of America mini tractor pull, a baby contest, crowning of the fourth grade king and queen, the customary corn eating contest and the fireman's water battle. Residents enjoyed the 112 customized classics cars exhibited while listening to the live broadcasting of WGRR Oldies.

Above: (left to right) Sue Peterman, Holli Gronas, and Nancy Mazzuckelli maintain a steady supply of Silver Queen corn to patrons (7193-d38).

Above: In August 1986, the FRESH members shown got their first tour of the Fernald site (2701-1).

FRESH Turns Fifteen

"We're Making A Difference" is the creed printed at the top of the newsletter published by the Fernald Residents for Environmental Safety and Health (FRESH). And what a difference they have made. Since the first volatile meetings in 1984, local residents, farmers, laborers and business leaders knew involvement was the answer to responsible oversight of the Fernald facility. Fifteen years ago, "ordinary" folks gathered around a kitchen table and formed a grassroots organization now known as FRESH.

Since those humble beginnings, FRESH has had a voice with members of Congress and high-ranking officials in DOE, developed contacts with other similar organizations, forged a bond with labor unions at the Fernald site and dealt extensively with the media on cleanup issues. The group is known as a trendsetter in public participation and has assisted others in finding their "voice" on issues of local and national importance.

"I was a young mother with a small child when this all started," said Lisa Crawford, FRESH president. "It's been an amazing journey but fifteen years later, we are still at it and will continue to be here until the job is finished."

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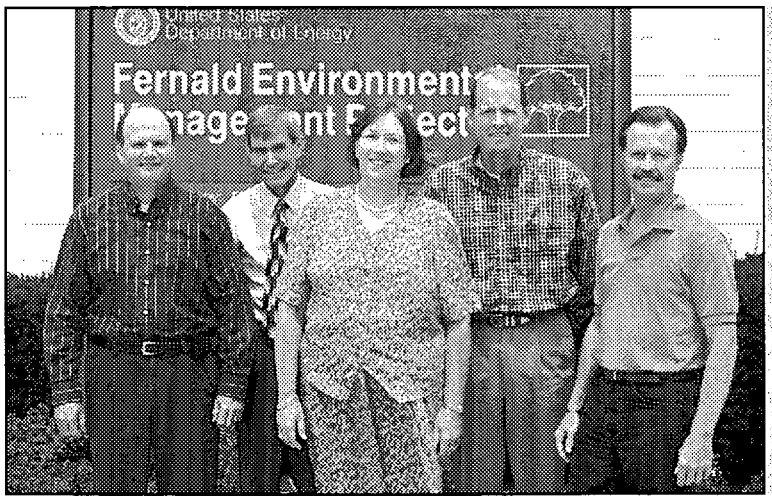
Recent Tours

Representatives from the Ohio EPA spend several days each month walking down current projects. One job of particular interest is the Wetland Mitigation Project where students from the University of Dayton are conducting research to evaluate the success of transplanted soils that originated from other wetland and prairie sites.

Right: Tom Schneider, (far left) OEPA project manager, points out some of the various plant species. Only woody and herbaceous plants known to be native to Hamilton and Butler Counties were selected for the project (6810-d226).



Susan Brechbill, the new manager of the Ohio Field Office took her first tour of Fernald on July 15. Formerly the chief counsel of DOE's Richland Operations Office, Brechbill assumed her duties in Ohio on July 2. She has over 30 years of government experience in the fields of law, procurement, industrial relations and program management.

Left: (left to right) Glenn Griffiths, DOE-FEMP Deputy Director; Bob Folker, Ohio Field Office Deputy Manager; Susan Brechbill; Jack Craig, DOE-FEMP Director; and Johnny Reising, DOE-FEMP Associate Director for Environmental Management (6810-d230).

The Fernald Connection

Imagine teaching a child to tie a shoe without a shoe. Learning is of no use unless you can apply your knowledge, and practical hands-on experiences make learning come alive. Application of knowledge is what occurred when Jeff Sander's University of Missouri-Rolla team won the 1999 Sunrayce sponsored in part by the DOE. During Sander's junior and senior years at nearby Harrison High School, he participated in an Environmental Explorers program at Fernald that provided practical experiences in environmental careers. Now as a sophomore at Missouri-Rolla, Sander's is studying electrical engineering and was part of the winning Sunrayce team. "The Explorers at Fernald introduced students to various careers and offered a chance to explore engineering interests," he said. "The Sunrayce gives students a chance to practice these skills and acquire new abilities as well. They were both great experiences."

Sunrayce is 1,300 miles of solar-powered racing from Washington D.C. to Orlando, Fla. and combines elements of engineering, business, teamwork and innovation with a unique focus on energy. All of the vehicles involved must be powered only by the sun and are designed and built entirely by the students, with faculty serving in advisory roles.

New documents added to the Public Environmental Information Center

The following information was added to the Public Reading Room, Administrative Record files and Post Record of Decision files at DOE's Public Environmental Information Center (PEIC):

- Soil Characterization & Excavation Project
  - Project Specific Plan for Area 1, Phase II Excavation Monitoring and Precertification Soil and Disposal Facility Project, Revision 1
  - Project Specific Plan for Sampling of the Advanced Wastewater Treatment Facility Soil Stockpile for On-Site Disposal Facility Waste Acceptance Criteria Attainment
  - Project Specific Plan for Area 1, Phase III Certification Sampling
  - Draft Project Specific Plan for Pre-design Sampling in the Area 2, Phase I Non-Waste Units and Area 2, Phase II – Part One
- Project Support Services
  - Final Operable Unit 3 Implementation Plan for Above-Grade Decontamination and Dismantlement of the Plant 6/East Warehouse Complex
- Miscellaneous
  - Final Environmental Assessment for Proposed Final Land Use at the Fernald Environmental Management Project
  - Finding of No Significant Impact for the Fernald Environmental Management Project Proposed Final Land Use Environmental Assessment
  - Final Responses to Public Comments on the Environmental Assessment for Final Land Use at the Fernald Environmental Management Project
  - Final Integrated Environmental Monitoring Status Report for First Quarter 1999
  - RCRA Part B Permit Application Revision 5.0 Section G: Contingency Plan
  - Community Transition Plan 1999 – 2002 and FY99 Implementation Request Fernald Community Reuse Organization

Note: This does not represent the complete list of new documents added to the PEIC for the month of July. Contact the PEIC, (513) 648-7480 for a complete list of new documents.

Fernald Report
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